



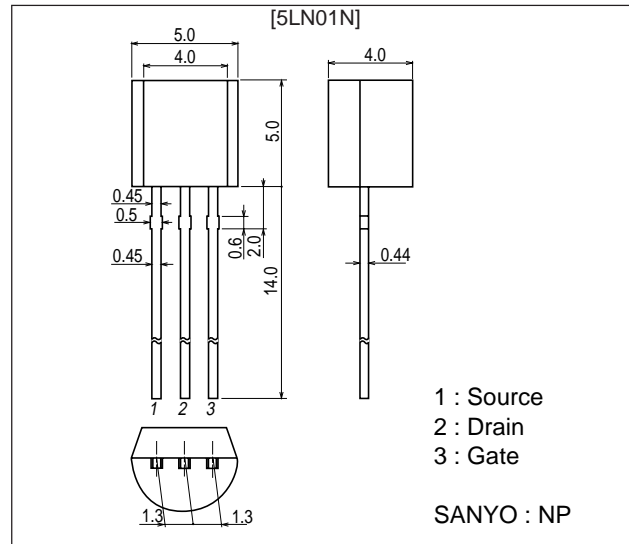
Ultrahigh-Speed Switching Applications

Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 2.5V drive.

Package Dimensions

unit : mm
2178



Specifications

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V _{DSS}		50	V
Gate-to-Source Voltage	V _{GSS}		±10	V
Drain Current (DC)	I _D		0.1	A
Drain Current (Pulse)	I _{DP}	PW≤10μs, duty cycle≤1%	0.4	A
Allowable Power Dissipation	P _D		0.4	W
Channel Temperature	T _{ch}		150	°C
Storage Temperature	T _{stg}		-55 to +150	°C

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	I _D =1mA, V _{GS} =0	50			V
Zero-Gate Voltage Drain Current	I _{DSS}	V _{DS} =50V, V _{GS} =0			10	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0			±10	μA
Cutoff Voltage	V _{GS(off)}	V _{DS} =10V, I _D =100μA	0.4		1.3	V
Forward Transfer Admittance	y _{fs}	V _{DS} =10V, I _D =50mA	0.13	0.18		S

Marking : YB

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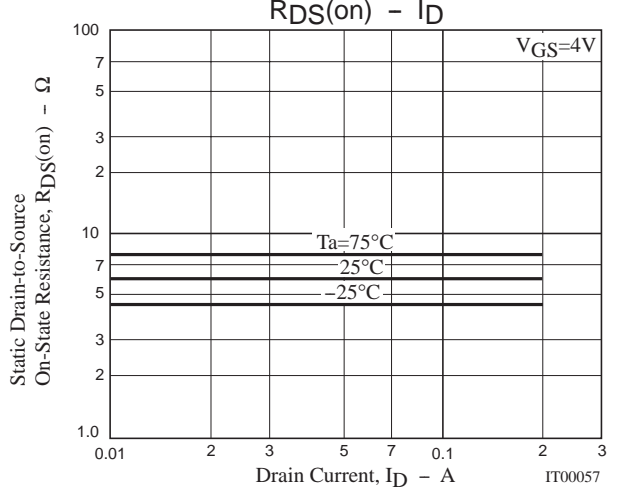
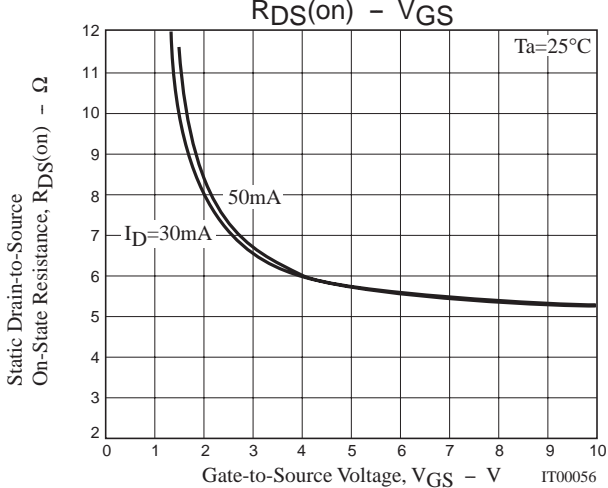
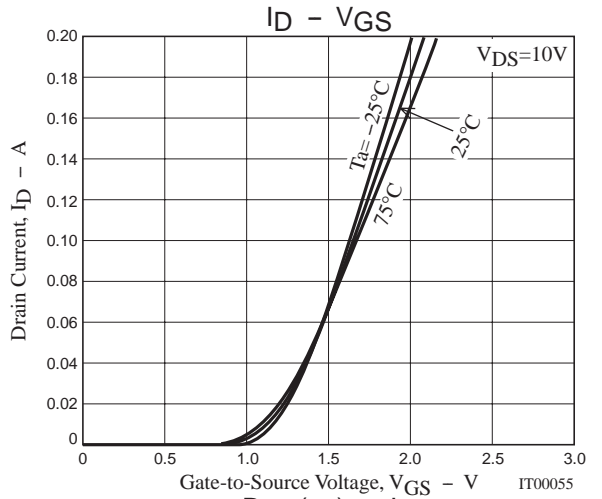
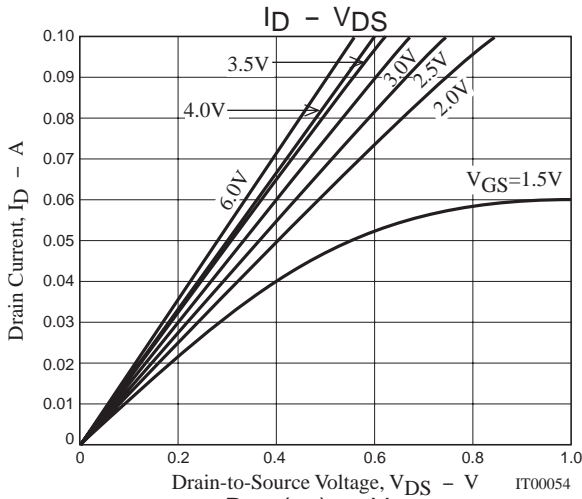
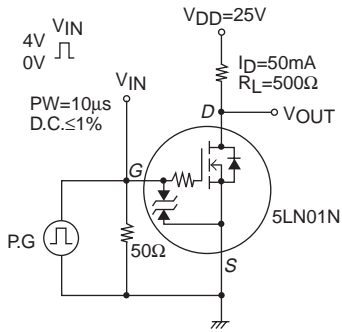
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5LN01N

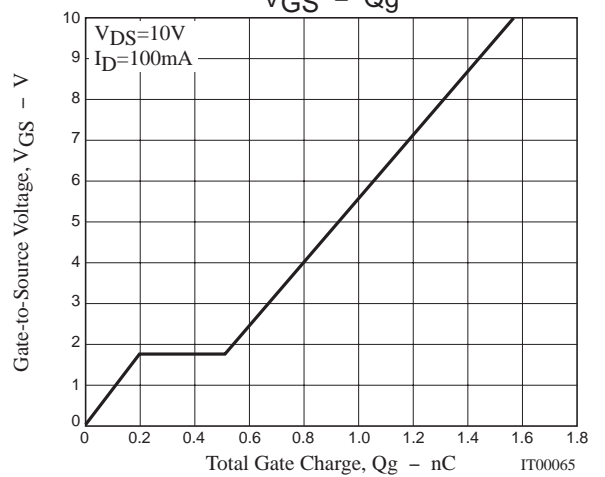
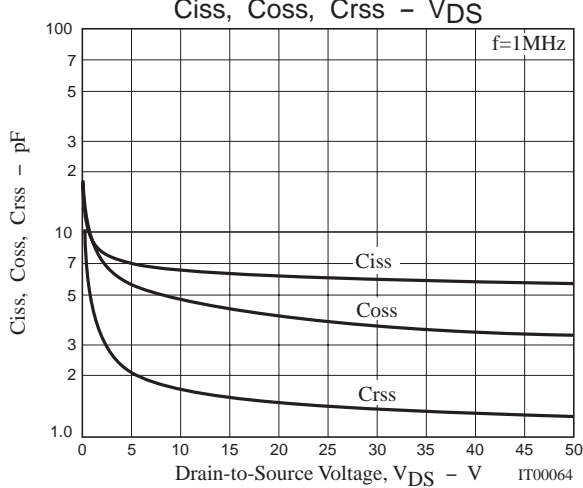
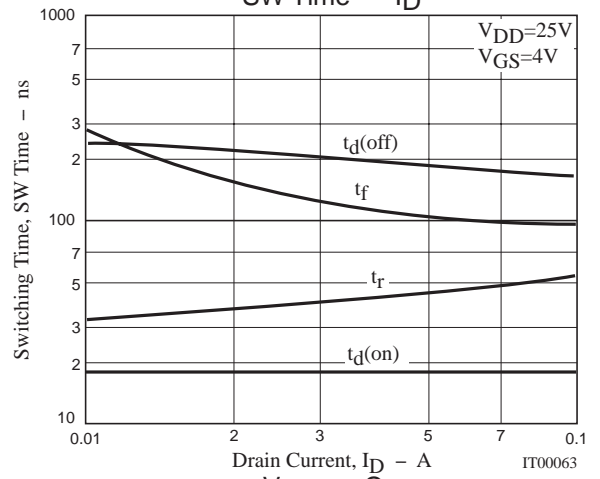
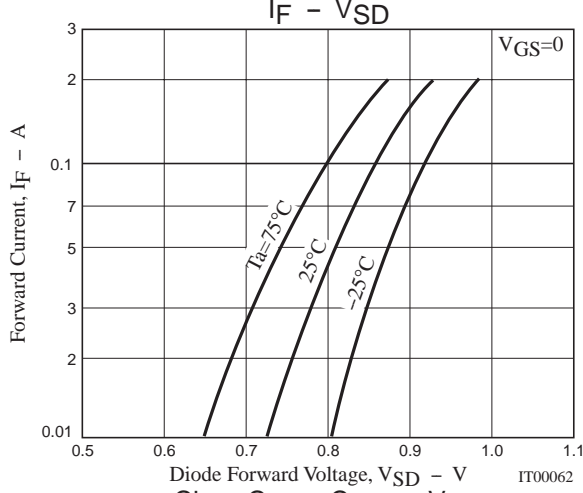
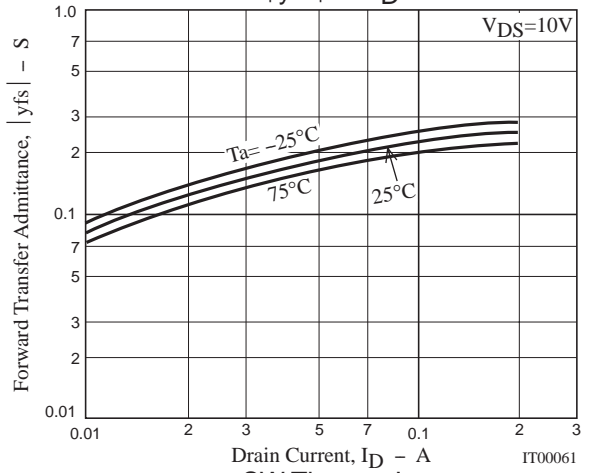
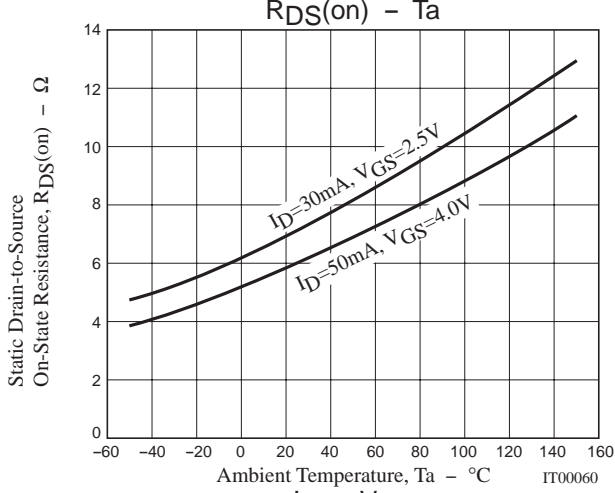
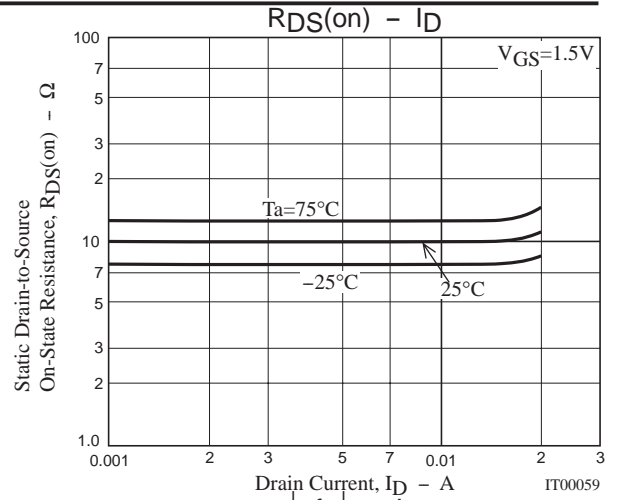
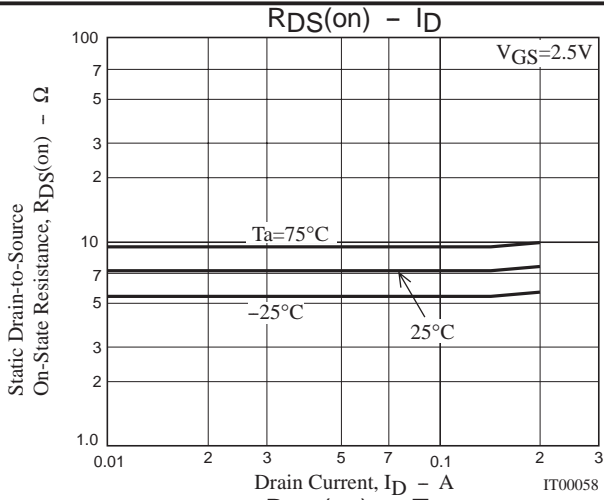
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Static Drain-to-Source on-State Resistance	$R_{DS(on)1}$	$I_D=50mA, V_{GS}=4V$		6	7.8	Ω
	$R_{DS(on)2}$	$I_D=30mA, V_{GS}=2.5V$		7.1	9.9	Ω
	$R_{DS(on)3}$	$I_D=10mA, V_{GS}=1.5V$		10	20	Ω
Input Capacitance	C_{iss}	$V_{DS}=10V, f=1MHz$		6.6		pF
Output Capacitance	C_{oss}	$V_{DS}=10V, f=1MHz$		4.7		pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=10V, f=1MHz$		1.7		pF
Turn-ON Delay Time	$t_d(on)$	See specified Test Circuit		18		ns
Rise Time	t_r	See specified Test Circuit		42		ns
Turn-OFF Delay Time	$t_d(off)$	See specified Test Circuit		190		ns
Fall Time	t_f	See specified Test Circuit		105		ns
Total Gate Charge	Q_g	$V_{DS}=10V, V_{GS}=10V, I_D=100mA$		1.57		nC
Gate-to-Source Charge	Q_{gs}	$V_{DS}=10V, V_{GS}=10V, I_D=100mA$		0.20		nC
Gate-to-Drain "Miller" Charge	Q_{gd}	$V_{DS}=10V, V_{GS}=10V, I_D=100mA$		0.32		nC
Diode Forward Voltage	V_{SD}	$I_S=100mA, V_{GS}=0$		0.85	1.2	V

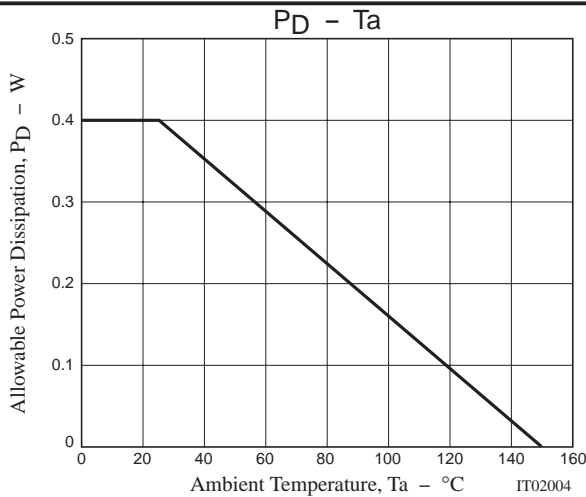
Switching Time Test Circuit



5LN01N



5LN01N



Note on usage : Since the 5LN01N is designed for high-speed switching applications, please avoid using this device in the vicinity of highly charged objects.

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